STIC Search Report
EIC 3700

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TO: John K Ford **Location: pk1 11b56** **Art Unit: 3753** **Monday, March 08, 2004** **Case Serial Number: 09/531531**	**From: Terry Solomon** **Location: EIC 3700** **CP2-2C08** **Phone: 305-5932** **Terrance.solomon@uspto.gov**

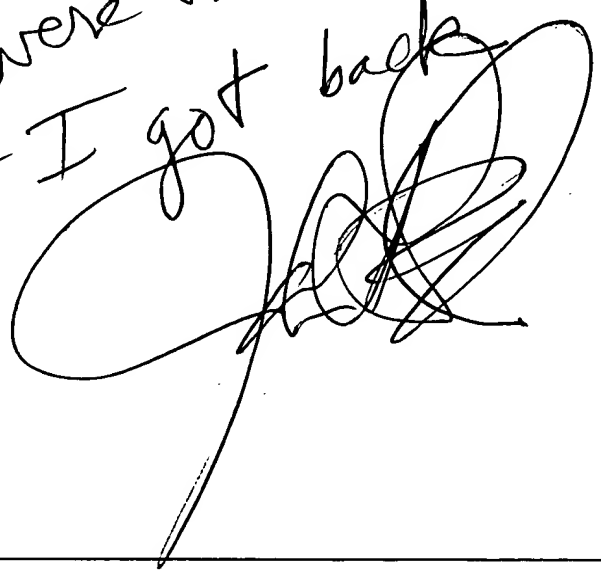
Search Notes

Ex. Ford,

Your translation requests have been submitted. Attached you will find machine translations for JP 8-295128 and JP 6-156049. Hopefully these can serve as substitutes until your official translations have been processed and returned. Lastly, I included an abstract for JP-Y 5-003365; however, I was unable to obtain a machine translation of this publication. The database I access has Japanese translations back to 1993, but for some reason, one was not available for JP (Y) 5-003365. If you have any questions, you can reach me at the number listed above.

T Solomon, Technical Information Specialist
EIC 3700

To the Board
Translations were ordered
This is what I got back



Patent/ public disclosure document

[Abstract(made by the applicant)] [Claims] [Detail Description] [Drawing Description]
PATOLIS will not assume the accuracy or the reliability of the translation

JP 8-295128

(57)
[ABSTRACT]

[PURPOSE]
While securing good drainage characteristics of condensation water at the time of a vehicle slant, an air conditioner ability fall to depend after the fashion of a bypass air passing the sideplate 3c lower part of vaporizer 3 is controlled.
[CONSTITUTION]
In sideplate 3c arranged by the most lower portion of vaporizer 3, only place fixed-quantity establishes draining off hole 3d in the part that is located to an air downstream from the air upstream end, and a bottom of case 1 is abutted with in an air upstream end of sideplate 3c. By this, The hot air which is not cooled with vaporizer 3 to the lower side of sideplate 3c prevents a situation to flow in directly. And, To some extent cooled air flows from draining off hole 3d through the lower side of sideplate 3c with vaporizer 3. When condensation water B flows out to an air upstream of vaporizer 3 by a slant of vaporizer 3, condensation water B is diverted from draining off hole 3d to the lower side of sideplate 3c.

[WHAT IS CLAIMED IS]

[Claim 1]
An air conditioner for vehicles; wherein; Of a tube spreading in a horizontal direction, a fin joined by this tube and this fin, it is bottommost, and is joined, the side having a spreading sideplate is put in a horizontal direction, a vaporizer of a type, The case which receives this vaporizer, An outlet port exhausting the condensation water which occurred in said vaporizer is installed in the preparation, bottom portion of said case with a blower sending air to said vaporizer, an air upstream end of an above sideplate abuts with a bottom of an above case, an air downstream end of an above sideplate intervenes in a cavity between bottoms of an above case, and is kicked an imposition in an above case an above vaporizer, a draining off hole is installed in the part that is located to an air downstream only place fixed-quantity among above sideplates from an air upstream end.
[Claim 2]
An air conditioner for vehicles; wherein; Of a tube spreading in a horizontal direction, a fin joined by this tube and this fin, it is bottommost, and is joined, the side having a spreading sideplate is put in a horizontal direction, a vaporizer of a type, The case which receives this vaporizer, An outlet port exhausting the condensation water which occurred in said vaporizer is installed in the preparation, bottom portion of said case with a blower sending air to said vaporizer, an air upstream end of an above sideplate abuts with a bottom of an above case, an air downstream end of an above sideplate intervenes in a cavity between bottoms of an above case, and is kicked an imposition in an above case an above vaporizer, draining off business notch region is installed in a domain reaching an air downstream only place fixed-quantity among above sideplates from an air upstream end.
[Claim 3]
In bottom side of said case; An air conditioner for claim 1 or vehicles as claimed in 2; wherein; A water breaking through prevention board preventing the situation that said condensation water flows out into an air upstream more is installed in the site that only place fixed-quantity is located in an air upstream from an air upstream end of said sideplate.
[Claim 4]
The air conditioner which is claim 1 for three vehicles as claimed in either one; wherein; Next to a flank of said case, and is disposed, and the air outlet side of said blower is coupled by the air inlet side of said case, on earth is arranged an above blower and an above case on a vehicle ceiling as structure.

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[INDUSTRIAL APPLICATION FIELD]
Drainage of condensation water-related improvement is balanced with security of air conditioner ability by a vaporizer, and a vehicle use air conditioner is related to, and the present invention is installed in a vehicle ceiling particularly, it is preferable as an air conditioner of the backseat air conditioner business that was configured to gush a cold wind in the rear in a compartment.
[0002]

[PRIOR ART]
An air conditioner for backseat air conditioners such as a station wagon (one Bockscar) conventionally is installed in a vehicle ceiling, it is configured to gush a cold wind in the rear in a compartment. It is required to make quantity of device projection from a vehicle ceiling to the lower part in a compartment small as much as possible not to obstruct comfort in a compartment.
[0003]
That is why, An air conditioner for backseat air conditioners is oblong, and dimensions of a top and bottom direction are small, it is thin, and is designed. Thus, A vaporizer had built-in by this air conditioner is designed in oblong thin shape as shown in FIG. 7. Here, Vaporizer 3 shown in FIG. 7 was a thing of a well-known Sir pane type, and on earth a brazing did sideplate 3c arranged on a top and bottom end for many holes flatness tube 3a which many several stood in a row, and formed a refrigerant passageway hole and Colgate fin 3b and this Colgate fin 3b protection.
[0004]
So-called side where tube 3a is postponed till a horizontal direction this vaporizer 3 reduces the flexural number of times of meandering shape of tube 3a, and to reduce a refrigerant pressure force loss is put, and a type is configured as. As for the ventilation air, it is sent air to a right angle direction as shown in FIG. 8 (a) (b) broken line A with long distance direction of tube 3a, and Colgate fin 3b arranged on between tube 3a is gone through, and a refrigerant and heat are changed, and it is cooled.
[0005]
In addition, The blower which is not illustrated is disposed at a flank position of case 1, it comes to make air flow in in case 1 from two dotted line positions 6 of an air upstream part of vaporizer 3. Outlet 5 gushing a cold wind cooled with vaporizer 3 goes to the compartment rear, and it opens. The described above side is put, and, with vaporizer 3 of a type, sideplate 3c is necessary, and a horizontal direction is postponed till, and it is arranged on end surfaces above and below vaporizer 3. As a result, Condensation water (solid line B) which occurred by cooling operation of vaporizer 3 gets on a flow of ventilation air (broken line A) along an aspect of tube 3a spreading in the horizontal direction of vaporizer 3 and an aspect of sideplate 3c, and, as shown in FIG. 8 (a), it shifts to an air downstream of vaporizer 3.
[0006]
Therefore, Cavity 8 is formed between air downstream lower end surface of sideplate 3c of vaporizer 3 and bottoms of air conditioner case 1, condensation water B is led to drain bread 9 which on earth is molded as one case bottom portion through this cavity 8 , even more particularly, it exhausts from outlet port 10 to one case outside. When a vehicle runs a downhill slope of an immediate slant, it is big so that an air upstream of vaporizer 3 faces the lower part, and air conditioner case 1 slants as shown in FIG. 8 (b). Thus, Condensation water B catches this slant, and it drifts toward lower end surface of an air upstream of vaporizer 3.
[0007]
Thus, Cavity 7 is formed by structure conventionally between lower end surface of an air upstream of vaporizer 3 and bottoms of air conditioner case 1 to drain of this condensation water, condensation water B is led to drain bread 9 of one case bottom through this cavity 7. In addition, Even more particularly, in a bottom of case 1, only place fixed-quantity arranges water leak prevention board 4 on the part that is located to an air upstream from an air upstream end of sideplate 3c of vaporizer 3 to prevent a situation to flow out to the blower side which the condensation water which lower end surface of an air upstream of vaporizer 3 is gone to, and flowed does not illustrate.
[0008]

[PROBLEM TO BE SOLVED BY THE INVENTION]
However, because each cavity seven or eight are formed by structure conventionally between air upstream lower end surface of sideplate 3c of vaporizer 3 and air downstream lower end surface and bottoms of case 1,

paths of bypass air C going along both cavities seven or eight is always formed by the lower side of vaporizer 3. There is air going along this bypass air road C at the bottom of an air conditioner ability fall in what is hardly cooled off by vaporizer 3.
[0009]
In addition, The hot air which went along bypass air road C is mixed with the low temperature air which passed vaporizer 3 in the air outlet side of vaporizer 3 suddenly, and there is a problem water of the whole hot air condenses dew, and to wake up a white fog phenomenon. While the present invention is a thing done in view of the point, and finding good drainage characteristics of condensation water at the time of a vehicle slant, it is directed to that the vehicle business air conditioner which can control an air conditioner ability fall to depend after the fashion of a bypass air passing the sideplate lower part of a vaporizer is provided.
[0010]

[MEANS TO SOLVE THE PROBLEM]
The present invention adopts the following technical means to achieve the object. Of a tube (3a) spreading in a horizontal direction by invention of claim 1, a fin (3b) joined with this tube (3a) and this fin (3b), it is bottommost, and is joined, a blower (2) sending air to a case (1) which the side having a spreading sideplate (3c) is put in a horizontal direction, and receive a vaporizer (3) of a type and this vaporizer (3) and the vaporizer (3) is comprised, an outlet port (10) exhausting the condensation water which occurred in the vaporizer (3) is installed in a bottom of the case (1), an air upstream end of the sideplate (3c) abuts with a bottom of the case (1), an air downstream end of the sideplate (3c) intervenes in a cavity (8) between bottoms of the case (1), and is kicked an imposition in the case (1) the vaporizer (3) , among the sideplates (3c), only place fixed-quantity is characterized in with the vehicle business air conditioner which a draining off hole (3d) is installed in in the part that is located to an air downstream from an air upstream end.
[0011]
Of a tube (3a) spreading in a horizontal direction by invention of claim 2, a fin (3b) joined with this tube (3a) and this fin (3b), it is bottommost, and is joined, a blower (2) sending air to a case (1) which the side having a spreading sideplate (3c) is put in a horizontal direction, and receive a vaporizer (3) of a type and this vaporizer (3) and the vaporizer (3) is comprised, an outlet port (10) exhausting the condensation water which occurred in the vaporizer (3) is installed in a bottom of the case (1), an air upstream end of the sideplate (3c) abuts with a bottom of the case (1), an air downstream end of the sideplate (3c) intervenes in a cavity (8) between bottoms of the case (1), and is kicked an imposition in the case (1) the vaporizer (3) , among the sideplates (3c), only place fixed-quantity is characterized in with the vehicle business air conditioner which draining off business notch region (3e) is installed in in a domain reaching an air downstream from an air upstream end.
[0012]
By invention of claim 3, the condensation water is characterized by that, even more particularly, a water breaking through prevention board (4) preventing a situation to flow out is installed in an air upstream in an air conditioner for claim 1 or vehicles as claimed in 2 in the part where only place fixed-quantity is located to an air upstream among bases of the case (1) from an air upstream end of the sideplate (3c).
[0013]
By invention of claim 4, it is claim 1, there is, and it is done, and, in a vehicle business air conditioner as claimed in either one of 3, is disposed the adjacency the blower (2) by a flank of the case (1), and the air outlet side of the blower (2) is coupled with the air inlet side of the case (1), the blower (2) and the case (1) are characterized in in what on earth is arranged on a vehicle ceiling as structure.
[0014]
In addition, A code in a parenthesis of each means shows correspondency with concrete means as claimed in an example to be described below.
[0015]

[OPERATION AND EFFECT OF THE INVENTION]
Even if, according to invention of claim 1-4, it makes an air upstream end of a sideplate of a vaporizer abut with bottom portion of a case, and a cavity in an air upstream end of a sideplate is abolished, the outlet port side can drain of condensation water through the draining off hole which established the condensation water which dropped to an air upstream of a vaporizer at the time of a vehicle slant to a sideplate or draining off business notch region well.

[0016]
Thus, Like a device, a flow of a hot air going along a bypass air road of the vaporizer lower side can be prevented conventionally. On the other hand, Because bottom portion of a case is abutted with in an air upstream end of a sideplate, and, among sideplates, only place fixed-quantity establishes a draining off hole in the part that is located to an air downstream from an air upstream end, to some extent air flowing into a draining off hole can be cooled in a fin part of a vaporizer beforehand.
[0017]
In a like manner, Because when a notch department for draining off is established in an air upstream end of a sideplate like invention of claim 2, a bottom of a case is abutted with in an air upstream end of a sideplate, it can make the air which a fin part of a vaporizer is passed beforehand, and to some extent is cooled flow into draining off business notch region. As a result, A fall of air conditioner ability by the establishment of a notch part for draining off hole and draining off can be controlled in a few value, air conditioner ability can be improved in comparison with a before device, and a white fog phenomenon due to mixture of a hot air to the whole cold wind can be prevented, too.
[0018]

[EXAMPLE]
As follows, An example shown in a figure is explained with the present invention. In FIG. 1, 2, as for 1, as for case made by resin of an air conditioner for backseat air conditioners, 2, it is disposed the adjacency with a blower by a flank of case 1. This blower 2 is designed to height approximately same as case 1, centrifugal fan 2a and fan driving motor 2b and scroll casing 2c are comprised.
[0019]
Air inlet aperture 2d inhaling air in a compartment in lower surface part of this scroll casing 2c opens, motor 2b is fixed to a face on scroll casing 2c again. The air outlet side of scroll casing 2c is directly connected to by the air inlet side of case 1, one backseat air conditioner business air conditioner composed of blower 2 and a part of case 1 becomes install as structure in a vehicle ceiling. In addition, Two dotted line positions 6 of FIG. 2 shows a bonding site with the air outlet side and the air inlet side of case 1 of scroll casing 2c.
[0020]
Vaporizer 3 is received in case 1, this vaporizer 3 is installed in frozen cycle having compressor (not shown) driven by a vehicle engine, ventilation air is cooled by evaporation latent heat of a refrigerant. Outlet 5 gushing a cold wind cooled with vaporizer 3 by an air downstream end of case 1 to a compartment is comprised, this outlet 5 faces the rear in a compartment, and a backseat air conditioner business air conditioner is installed in a vehicle ceiling.
[0021]
It is preferable, and vaporizer 3 is designed in oblong thin shape with a thing of a Sir pane type shown in previously described FIG. 7 conventionally same as structure. So-called side where the tube 3a is postponed till a horizontal direction is put, and this vaporizer 3 is configured as a type , as shown in FIG. 2 (a) (b) broken line A, is sent air to a right angle direction with long distance direction (left-and right-hand of FIG. 7) of tube 3a, and Colgate fin 3b arranged on between tube 3a is gone through, and a refrigerant and heat are changed, and ventilation air is cooled.
[0022]
In addition, As vaporizer 3 mentioned above, on earth a brazing did sideplate 3c arranged on a top and bottom end for many holes flatness tube 3a and Colgate fin 3b and this Colgate fin 3b protection, and these member is formed in aluminum materials, cavity 8 is formed between bottoms of air downstream end and case 1 of sideplate 3c of the lower side.
[0023]
This cavity 8 is formed by establishing a reentrant in a bottom of case 1 corresponding to a downward position of an air downstream end of sideplate 3c partially. On the other hand, An air upstream end of sideplate 3c of the lower side abuts with bottom portion of case 1 directly without a cavity being formed at a downward position of an air upstream end of sideplate 3c of the lower side, ventilation air does not flow into the lower part of an air upstream end of sideplate 3c of the lower side by this. Of course, Ventilation air does not flow into top of sideplate 3c of the top side in it being abutted interior wall of case 1 as for sideplate 3c of the top side of vaporizer 3 overall either.
[0024]

And, In sideplate 3c of the lower side, draining off hole 3d is installed in the site that only place fixed-quantity (for example, around 5mm) is located in an air downstream from the air upstream end. Here, Shape of draining off hole 3d becomes a letter of oblong rectangle as shown in FIG. 1 (a) by this example. Vaporizer 3, an air upstream end of sideplate 3c abuts with bottom portion of case 1 to have the described above constitution, an air downstream end of sideplate 3c intervenes in cavity 8 between bottoms of case 1, and is kicked an imposition in case 1.

[0025]

In addition, On earth drain bread 9 and outlet port 10 is molded as one case bottom portion same as structure conventionally to drain of condensation water (solid line B of FIG. 2) which occurred with vaporizer 3, the drain hose which is not illustrated from outlet port 10 is passed through, and condensation water is exhausted to the compartment outside. In addition, On earth water breaking through prevention board 4 is molded as the part where, even more particularly, only place fixed-quantity is located to an air upstream from an air upstream end of sideplate 3c of vaporizer 3 in a bottom of case 1 so that the condensation water which flowed toward lower end surface of an air upstream of vaporizer 3 prevents a situation to flow out to blower 2 side.

[0026]

Next, The operation of the present embodiment is explained in the constitution. FIG. 2 (a) shows a state when a vehicle runs a flat road , as for the ventilation air, is cooled vaporizer 3 with flow, vaporizer 3 like broken line A by evaporation latent heat of a refrigerant. Then, Ventilation air does not flow into the lower part of an air upstream end of sideplate 3c of the lower side in an air upstream end of sideplate 3c of the lower side of vaporizer 3 abutting with bottom portion of case 1 directly.

[0027]

However, After one part of ventilation air flowed into vaporizer 3, the lower side of sideplate 3c is flowed from draining off hole 3d into, but, after the inflow air to this draining off hole 3d was cooled in air upper reaches part of Colgate fin 3b of vaporizer 3, draining off hole 3d is passed. In addition, Quantity of inflow air to draining off hole 3d decreases by ventilation resistance by Colgate fin 3b, too.

[0028]

Thus, Even if there is inflow air to draining off hole 3d, a fall of air conditioner ability based on it can be largely reduced in comparison with a fall of air conditioner ability to depend after the fashion of a hot air going along bypass air road C in a device conventionally. In addition, The condensation water which occurred by cooling operation of vaporizer 3 gets on a flow of ventilation air A as shown in solid line B, and, along an aspect of tube 3a, it shifts to an air downstream of vaporizer 3, it drops from an air downstream end of vaporizer 3 to the lower part. And, Via cavity 8, drain bread 9 is flowed into, is exhausted from outlet port 10 by one case outside.

[0029]

On the other hand, When a vehicle runs a downhill slope of an immediate slant, it is big, and, as shown in FIG. 2 (b), it slants so that an air upstream of vaporizer 3 faces the lower part. Thus, Condensation water B catches this slant, and lower end surface of an air upstream of vaporizer 3 is gone to, and, against a flow of ventilation air, it drifts. To some extent, with a thing FIG. 3 (a) magnifies behavior of a flow of condensation water when an air upstream of vaporizer 3 slanted toward lower classes as discussed above, and to show in, condensation water B collects in space between things of air upstream end of vaporizer 3 and water breaking through prevention board 4 , as for condensation water B, is exhausted this draining off hole 3d from it goes, and it drops to drain bread 9 and outlet port 10 to one case outside by what a level (water level) of condensation water B which collected in this space reaches to a position of draining off hole 3d of sideplate 3c of the lower side.

[0030]

Here, Malfunction an air upstream edge is gone to most, and flow, inlet aperture 2d of blower 2 are leaked from from flow, here to blower 2 side in a compartment, and to appear of case 1 going low than this draining off hole 3d produces without condensation water B flowing into draining off hole 3d as shown in FIG. 3 (b) when water leaks, and prevention board 4 is not installed. It leaks, and water comes to need prevention board 4 to cancel this malfunction.

[0031]

Now, Height of water breaking through prevention board 4 is lifted to make condensation water B flow into draining off hole 3d when air upstream end of vaporizer 3 and distance L with draining off hole 3d are increased as shown in FIG. 3 (c), and need to increase quantity of condensation water B to collect in four water breaking through prevention board parts produces. It causes increase of ventilation resistance water leaks, and

to lift height of prevention board 4 too much, because a fall of quantity of ventilation, a fall of air conditioner ability are caused, it must be avoided.

[0032]

Thus, It is preferable for an aperture position of draining off hole 3d to limit within a predetermined value from an air upstream end of sideplate 3c. In addition, Before flowing into draining off hole 3d air flowing into draining off hole 3d is cooled, and to control a fall of air conditioner ability, it is necessary for air to pass Colgate fin 3b part only predetermined distance. The water which it mentioned above to set leaked from an air upstream end of sideplate 3c at a position of around 5mm, and, according to an experiment of scholars of present invention, examination, the aperture position of draining off hole 3d understood the most preferred thing for restraint of height of prevention board 4 and cooling operation security of inflow air to draining off hole 3d.

[0033]

In addition, An aperture area of draining off hole 3d should set depending on quantity of outbreak of condensation water, it had better set to ejectable the lowest size of condensation water to control quantity of inflow air to draining off hole 3d. In drainage characteristics and both sides of air conditioner ability of condensation water, a good result was provided when a unit was mm, and an experiment examined a trial product based on dimensions example of this concreteness with a thing FIG. 4 (a) (b), sideplate 3c, draining off hole 3d and water leaked, and to show size of prevention board 4, dimensions example of concreteness like a position in.

[0034]

In addition, When a vehicle runs an uphill slope of an immediate slant, a slant of vaporizer 3 extends to condensation water in vaporizer 3 slanting toward a downward course, and an air downstream of vaporizer 3 shifts to an air downstream of vaporizer 3 along a flow of ventilation air. Thus, Pass, and, same as flatness road run time of FIG. 2 (a), it is drained drain bread 9, outlet port 10 from cavity 8 to one case outside.

[0035]

The present invention can be transformed in various ways without being limited to the example , for example, flexure forms one part of a bottom of case 1 like FIG. 5 convexly without limiting to a thing water leaks, and prevention board 4 sticks out to the letter of a flat board as is the case with statement above from a bottom of case 1, and to mold, and water breaking through prevention board 4 may be formed. In addition, Even if, as shown in FIG. 6, only place fixed-quantity establishes draining off business notch region 3e in a domain reaching an air downstream instead of draining off hole 3d from an air upstream end of sideplate 3c, similar operation/working-effect can be got.

[0036]

In other words, Of FIG. 6 , in other instances, with the thing which formed draining off business notch region 3e of two rectangles at a position corresponding to draining off hole 3d of a rectangle of 2 of FIG. 4 (a), a unit of dimensions of concreteness is mm. In this example, it is the same as the above-mentioned example to make an air upstream end (a stub of right and left of notch part 3e for draining off and a stub of the middle) of sideplate 3c abut with bottom side of case 1.

[0037]

In addition, Fin 3b of vaporizer 3 is arranged to an air upstream end of sideplate 3c , therefore, fin 3b extends to a formation part of notch region 3e for draining off. Thus, Because it can make to some extent cooled air flow into notch part 3e for draining off in a fin 3b part, it is few, and an air conditioner ability fall by draining off business notch region 3e can be controlled.

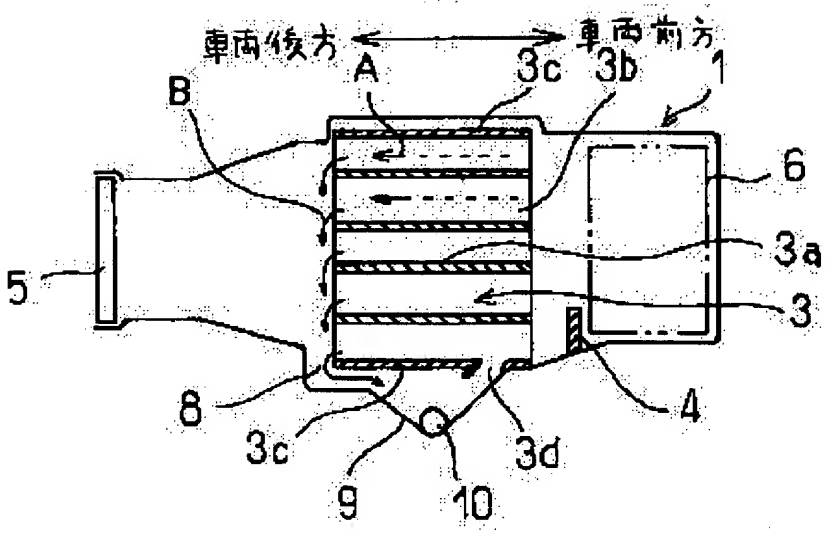
[0038]

In addition, The number of draining off hole 3d and notch part 3e for draining off splits the small into many several of higher than 3 without limiting to FIG. 4, two shown in 6, and it may be done in one, it can be transformed as necessary in various ways. In addition, It can be composed with appropriate hole shape without doing with a rectangle about shape of draining off hole 3d and notch part 3e for draining off. In addition, A thing usable in a vaporizer of so-called laminating type to compose tube 3a by what two pieces of sheet metals are laminated, and it is joined with without limiting to a thing of the Sir pen type that many holes flatness tube 3a shown in FIG. 7 for vaporizer 3 is bent in the letter of meandering, and was formed, of course. For this case, it is the same that it is put, and the width that the tube 3a spreads in a horizontal direction as for the vaporizer of laminating type is a type.

[BRIEF DESCRIPTION OF DRAWINGS]

[FIG. 1]
(a) An outline plane cross-sectional view (b) of a device showing *ha* one embodiment of the invention is front view of the device.
[FIG. 2]
It is a X-X sectional view of FIG. 1 (b).
[FIG. 3]
(a) It is the feature expanded sectional view which transformed feature expanded sectional view (b) (c) of *ha* FIG. 2 (b), each (a) in question.
[FIG. 4]
(a) A plane view (b) to show concrete dimensions example of a lower side sideplate in *ha* one embodiment of the invention is a feature expanded sectional view water leaks, and to show dimensions example of concreteness of a prevention board in.
[FIG. 5]
Water in the present invention is the feature expanded sectional view which it leaks, and show an example other than a prevention board.
[FIG. 6]
It is a plane view to show an example other than a lower side sideplate in the present invention.
[FIG. 7]
It is the present invention and a perspective diagram of a vaporizer to offer for explanation of a device conventionally.
[FIG. 8]
It is a longitudinal sectional view of a device conventionally.
[DENOTATION OF REFERENCE NUMERALS]
One ... air conditioner case, two ... blowers, three ... vaporizers, a 3a ... tube, 3b ... Colgate fin, a 3c ... sideplate, a 3d ... draining off hole, 3e ... draining off business notch region, four ... water breaking through prevention boards, eight ... cavities, nine ... drain bread, ten ... outlet ports.

(a)



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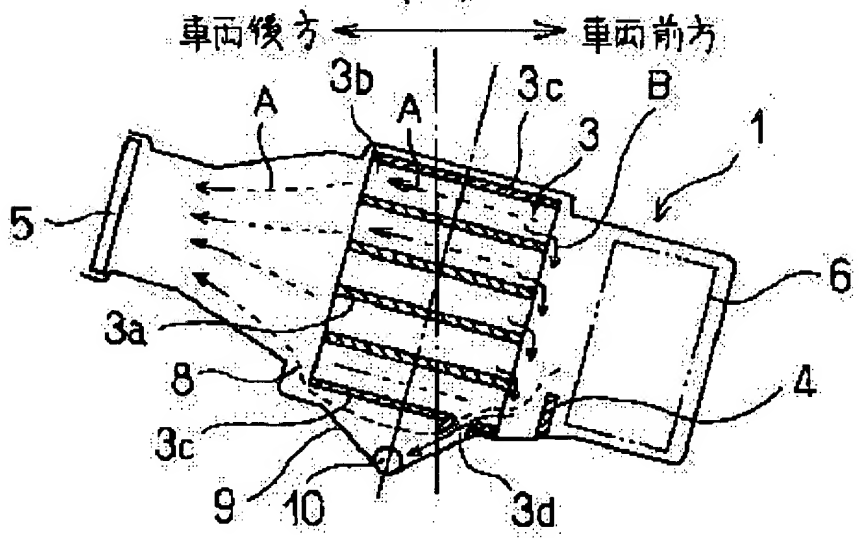

1	空調装置ケース	4	水洗れ防止板
3	蒸発器	A	送風空気の流れ
3a	チューブ	B	凝縮水の流れ
3b	コルゲートフィン	8	空隙
3c	サイドプレート	9	ドレンパン
3d	水抜き穴	10	排水口

Patent/ public disclosure document

[Abstract(made by the applicant)] [Claims] [Detail Description] [Drawing Description]
PATOLIS will not assume the accuracy or the reliability of the translation

JP 6-156049

(57)
[ABSTRACT]

[PURPOSE]
An occupation capacity in a compartment is small, and the right handle type, heating / ventilation / the air conditioner which can be installed in which car of the left handle type are provided.
[CONSTITUTION]
Between and blower 18 is done below, and blower 18 and air distributor 22 are disposed perpendicularly, and possess the lower part of gauge panel 66 of the front of compartment 12 separation partition 14 separating compartment 12 and engine compartment 16 and air distributor 22, fresh air ingestion tube 32 which is flatness is established in a car widthwise direction, and fresh air is absorbed with blower 18, and heat exchanger 44 of vaporizer 28 of air conditioning business and heating business are sent out with and pass air distributor 22 from outlet 50, 54,58,60 to the inside of car. Because the whole device is perpendicular mold, there are a little occupation capacities in a compartment, and there does not need to be the thing that it begins to be received to an engine compartment. Because it is symmetric, a steering wheel can be installed in a car of a form of right and left which without remodeling.

[WHAT IS CLAIMED IS]

[Claim 1]
A blower (18) which comprises an inlet aperture (24) and a discharge opening (26) of air, An air intake (40) connected to a discharge opening (26) of a blower (18) is provided, in heating / ventilation / an air conditioner of compartment business of a car comprising a distributor (22) which an air outlet (50) (54) (from 58) (60) sends a cold wind or hot air to each part in a compartment through a heat exchanger (46) loaded in it, and is crowded; Heating / ventilation / the air conditioner which a compartment of a car is for; wherein; A blower (18) is disposed perpendicularly as the lower part of a distributor (22), similarly a bottom end was connected to an inlet aperture (24) of a blower (18) respectively and a fresh air ingestion tube (32) was almost arranged on the bore where fresh air inhaled the upper end of an air ingestion tube (32) which turned to verticality between approximately perpendicular separation partition (14) and air distributors (22) which separated a compartment (12) and an engine compartment (16) of a car.
[Claim 2]
Heating / ventilation / the air conditioner which a compartment of a car is for; according to claim 1 wherein; A fresh air ingestion tube (32) extends to a place of greater than overall height of a distributor (22) at least.
[Claim 3]
Claim 1 or heating / ventilation / the air conditioner which a compartment of a car as claimed in 2 is for; wherein; A fresh air ingestion tube (32) extends to a high place at least from the upper part of a blower (18).
[Claim 4]
Heating / ventilation / the air conditioner which there is, and it is done, and a compartment of a car as claimed in any one of 3 is for which is claim 1; comprising: Section form to be slim in the car widthwise direction where a fresh air ingestion tube (32) has a small dimensions of a top and bottom direction of a car, and dimensions of a car widthwise direction are big.
[Claim 5]
Heating / ventilation / the air conditioner which there is, and it is done, and a compartment of a car as claimed in any one of 4 is for which is claim 1; comprising: A circulation air intake (78) of at least 1 to communicate with the compartment (12) inside is comprised and and a fresh air ingestion tube (32) can stop by inhalation of circulation air, **shiioki* which makes a blower (18) do aspiration with fresh air from the body outside, A control valve (80) which can move to the open position that aspiration can prick a blower (18) with air to circulate through from a compartment.
[Claim 6]
Heating / ventilation / the air conditioner which there is, and it is done, and a compartment of a car as claimed in any one of 5 is for which is claim 1; wherein; A blower (18) comprises two fans (84) that two places of aspiration ports (through 90) (92) absorb air respectively and it is driven a fan of two these with a motor (88) of common one.

[Claim 7]
Heating / ventilation / the air conditioner which there is, and it is done, and a compartment of a car as claimed in any one of 6 is for which is claim 1; wherein; With a discharge opening (26) of a blower (18), there is as downward-facing at an air intake (40) of a distributor (22) again upward.
[Claim 8]
Heating / ventilation / the air conditioner which there is, and it is done, and a compartment of a car as claimed in any one of 7 is for which is claim 1; comprising: An exhaust pipe (68) it is communicated with a vaporizer a vaporizer (28) is established between a discharge opening (26) of a blower (18) and air intakes (40) of a distributor (22), and air done air conditioning is sent into a distributor (22) and to exhaust cohesion water from a vaporizer (28) and turn to the lower part along a blower (18).

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[INDUSTRIAL APPLICATION FIELD]
The present invention relates to heating / ventilation / the air conditioner which a compartment of a car is for.
[0002]

[PRIOR ART]
For this kind of device, a device comprising an inlet aperture of air and an air outlet sending air to each part of a compartment of a car with a heat exchanger heating the air which is already inhaled with a distributor having an inlet aperture of one by the preparation and this distributor connected to a discharge opening of a blower having a discharge opening and a blower and cooling or heated air is known.
[0003]
Air inhaled from the outside of a compartment is compressed by means of a blower, and it is sent to a distributor, and such a well-known thing is crowded with, after having heated as necessary, it is regulated with an appropriate controlling flap valve, and it sends air in a compartment from an outlet.
[0004]
Generally, in this kind of well-known device, an air inlet aperture of a blower is installed in a position in proximity to an air inlet aperture disposed at the upper part of a hood covering up engine compartment by the lower end of a shelter belt window or an air harvest bore.
[0005]
A distributor comprises just after a blower, a device is disposed in total approximately horizontally.
[0006]

[PROBLEM TO BE SOLVED BY THE INVENTION]
Because the well-known device is constitution disposed approximately horizontally, even if it is installed in lower part of the compartment side of a gauge panel or which in an engine compartment, an occupation capacity grows big.
[0007]
In addition, Need to design a device to apply to a car of the asymmetric right handle type and left handle type separately produces, a production cost is influenced.
[0008]
Even more particularly, Because this well-known device is generally full of, and a hand is hard to arrive, when work of maintenance and repair was necessary, it is awkward.
[0009]
Even more particularly, it makes an inlet aperture of a blower communicate with a compartment in this well-known device, and air in a compartment is circulated, when this inlet aperture is closed with a flap valve, a blower absorbs outside fresh air.
[0010]
So that we have limitation in dimensions at this well-known device, can be disturbed the normal operation of a blower by an air inlet aperture.

[0011]
It is a main purpose of the present invention to provide heating / ventilation / the air conditioner which a compartment of the car which broke off the weak point is for.
[0012]
It is another object of the present invention to provide the device that an occupation capacity to be able to put in a compartment of a car is small.
[0013]
It is a still another object of the present invention to provide the device which can be possessed even if motor vehicle is right handle mold even if it is the left handle type.
[0014]
It is a still another object of the present invention to provide the device which begins not to be received in an engine compartment at all.
[0015]
It is a still another object of the present invention to provide the operation of a blower is not disturbed by an inlet aperture of circulation air device.
[0016]

[MEANS TO SOLVE THE PROBLEM]
To achieve the object, It is as follows, and the present invention is configured.
[0017]
An air intake connected to a discharge opening of a blower and a blower comprising an inlet aperture and a discharge opening of air is comprised , in heating / ventilation / an air conditioner of compartment business of a car comprising the distributor which a cold wind or hot air is sent to each part in a compartment through a heat exchanger loaded in it from an air outlet, and is crowded, a blower is disposed perpendicularly as the lower part of a distributor, it is approximately heating / ventilation / an air conditioner of compartment business of a car including similarly a bottom end is connected to an inlet aperture of a blower respectively and having arranged a fresh air ingestion tube on the bore where fresh air inhales the upper end of an air ingestion tube turning to verticality between approximately perpendicular separation partition and air distributors separating a compartment and an engine compartment of a car.
[0018]
It is desirable for a fresh air ingestion tube to extend to a place of greater than overall height of an air distributor at least.
[0019]
It is desirable for a fresh air ingestion tube to extend to a high place at least from the upper part of a blower.
[0020]
A thing having section form to be slim in the car widthwise direction where a fresh air ingestion tube has a small dimensions of a top and bottom direction of a car, and dimensions of a car widthwise direction are big is desirable.
[0021]
A thing comprising the control valve which is displaceable in the open position where aspiration can put air circulating through fresh air from the body outside from **shiioki* and a compartment making a blower do aspiration in a blower is desirable a fresh air ingestion tube comprises at least one circulation air intake communicating with the compartment inside and and inhalation of circulation air is left.
[0022]
A blower comprises two fans who absorb air through two places of aspiration ports respectively, it is desirable that is driven a fan of two these to beat with a motor of common one.
[0023]
It is desirable that there is as downward-facing at an air intake of a distributor with a discharge opening of a blower again upward.
[0024]
It is desirable to establish an exhaust pipe it is communicated with a vaporizer a vaporizer is established between a discharge opening of a blower and air intakes of a distributor, and air conditioning sends done air into a distributor and to exhaust cohesion water from a vaporizer and turn to the lower part along a blower.
[0025]

[OPERATION]
Occupation capacities in the body of a car decrease so that it is different from a conventional level model, and is composed in vertical direction, it can be installed between a driving seat and gauge panels.
[0026]
A fresh air ingestion tube turning to vertical direction is connected between inlet apertures of a blower installed in the fresh air inhalation bore which is near to the lower part of a shelter belt window and the lower part of a device, and fresh fresh air is taken in.
[0027]
Air absorbed to a blower by a control valve installed in an inhalation bypass line road of a blower is changed to fresh fresh air and circulation air from a compartment.
[0028]

[EXAMPLE]
Schematic cross-sectional view, FIG. 2 that FIG. 1 cut a device of the present invention installed to a car in a forward and backward course of a car are sectional views in II - II Line of FIG. 1.
[0029]
FIG. 1 shows heating / ventilation / an air conditioner (10) which a compartment (12) of a car is for. This device (10) is installed in the compartment side of a perpendicular separation partition (14) which separates an engine compartment (16) from a compartment (12) of a car. A separation partition (14) serving as a fire wall turns to a crossing direction as against a forward and backward course of a car.
[0030]
A device (10) is attached to a separation partition (14) in vertical direction, an air blower (18) which is located as a required thing in a near place on a floor (20) of a car is comprised. An air blower (18) is located in one right under air distributor (22).
[0031]
Spiral, a case (23) of an air blower (18) is formed, an air discharge opening (26) of the upswing that installed an air inlet aperture (24) and a vaporizer (28) turning to separation partition (14) diagonal top is comprised. It is installed a fan unit (30) of motor drive to be described below within a thing (23) of a case.
[0032]
In addition, Between a separation partition (14) and distributors (22), it is made fresh air ingestion tube (32) which almost turns to vertical direction. A fresh air ingestion tube (32) extends to a high position than a blower (18) ahead of overall height of a distributor (22). In the upper end of a fresh air ingestion tube (32), a bottom end is connected to an inlet aperture (24) of a blower (18) in a fresh air inhalation bore (34) in the same way.
[0033]
A fresh air inhalation bore (34) acts on as "a water separator". This comprises near a joint with a shelter belt window (36) and a hood (38) as is known. By this constitution, Fresh air from the outside goes along a fresh air ingestion tube (32), and is inhaled by a blower (18), after a vaporizer (22) was passed, and was worked, is seen off to a distributor (22).
[0034]
To a distributor (22), there is a downward air intake (40) communicating with an air discharge opening (26) of a blower (18). An air intake (40) communicates with a resulting heated air manifold (44) which installed a heat exchanger (46) named fresh air a manifold (42) and the radiator which are turned on.
[0035]
A control valve (48) shares in two manifolds (to 42) (44) and flowing air, and temperature of air sent in a compartment (12) through an outlet of each part is regulated.
[0036]
For purposes of this example, A distributor (22) comprises at least one air outlet (50) to the lower end of a shelter belt window (36), is prevented freezing and cloudiness of a shelter belt window (36). Quantity of wind of an air outlet (50) is controlled with a flap valve (52) doing pivotal movement.
[0037]
In addition, At least one outlet (54) which a distributor (22) can face a low place of a compartment (12), and open is comprised, the appropriate duct line which is not illustrated is passed through, and is sent air in the vicinity of a foot of a passenger. Quantity of wind of an air outlet (54) is controlled with another flap valve

(56).
[0038]
Even more particularly, a distributor (22) comprises an air outlet (58) according to at least one thing located in the side and an air outlet (60) of one located centrally. Quantity of of air outlet (58) and (60) wind is controlled with a flap valve (62) doing one another pivotal movement.
[0039]
The whole of a device (10) is loaded in a housing (64) installed with approximately perpendicular posture by a gauge panel (66) of a car.
[0040]
It was cooled as necessary and after air sent by a fan unit (30) of motor drive went along a vaporizer (28), and was dehumidified or after similarly was heated with a heat exchanger (46) as necessary, each control valve (52) (56) (62) is based on setting, and is sent each outlet (50) (54) (from 58) (60) out in a compartment (12).
[0041]
Even more particularly, a device (10) comprises an exhaust pipe (68) exhausting the water which cohered in a vaporizer (28). This exhaust pipe (68) communicates with a vaporizer (28), it spreads along a case (23) of a blower (18) underneath. It is made an opening (70) to exhaust cohesion water under a car for a bottom end of an exhaust pipe (68).
[0042]
A fresh air ingestion tube (32) comprises a slim cross-section in the crosswise direction. For purposes of this example, With this section form, a top and bottom direction of a car is assumed short sides parallel, is done a long side and a rectangle to do in a widthwise direction.
[0043]
A fresh air ingestion tube (32) is partitioned off with the parallel rear wall (74) by front wall (72) and it of the separation partition (14) side. For example, width of wall (72) which is forward and backward and (74) is about 300mm more widely than overall width of a distributor (22).
[0044]
Even more particularly, it is partitioned off two sidewalls (with 76) (FIG. 2 reference) which a fresh air ingestion tube (32) is facing, and was installed. These width is narrow, and, for example, it is around 30mm.
[0045]
Each sidewalls (76) comprise a circulation air inlet aperture (78) communicating with the inside of a compartment (12) , to this inlet aperture (78), is installed a controlling flap valve (80) respectively. As for each flap valve (80), it is pivoted pivotably by the position where *shi makes a circulation air inlet aperture (78) as shown in a solid line in FIG. 2 and open position as shown in broken line.
[0046]
Then a fan unit (30) of motor drive absorbs only air from the body outside as shown in arrow F1 in FIG. 2 with the position where *shi does each circulation air inlet aperture (78). On the other hand, A circulation air inlet aperture (78) is left open, then a fan unit (30) of motor drive absorbs only circulation air from a compartment as shown in arrow F2 in FIG. 2 with the position where two flap valves abut with a common stopper (82). It does not need to say that an intermediate position can set a flap valve (80).
[0047]
In addition, As shown in FIG. 2, a fan unit (30) driven a motor of a blower (18) loads two fans (84) at both ends of one horizontal axis (86), and it becomes drive by a motor (88) of one. Two places of air inlet aperture (from 90) (92) air is supplied two fans (84) with. It wants to be paid attention to what is become as a flap valve (80) for circulation air control blocks up an air inlet aperture (with 90) (92) in no position.
[0048]
A capacity to occupy in a compartment is small and this device (10) does not begin to graze to an engine compartment at all so that it is installed with posture to be approximately perpendicular to a separation partition (14).
[0049]
And it is established whether a vaporizer equips a car with an air conditioner or it is omitted.
[0050]

[EFFECT OF THE INVENTION]
(a) It can be installed in the lower part of a gauge panel so that it is different from a conventional horizontally-

shaped device, and is composed in a perpendicular model, an occupation capacity in a compartment can be lowered.

[0051]

(b) It is not necessary to remodel matsutakuhamidasanainode, the body of a car in the engine compartment side.

[0052]

(c) Because it is configured in the symmetric form that can be installed on centerline of a car, even the right handle type can install a car in even the left handle type without a change.

[0053]

(d) Because is formed a fresh air ingestion tube in the section form that is flatness in a width direction, when it was installed between air distributors of a separation partition and a device, fresh air of quantity without occupation capacities increasing and it is necessary can be taken in.

[0054]

(e) Because depth dimensions of a device are small, and is installed in the lower part of a gauge panel just before a driving seat, maintenance and repair work are easy.

[0055]

(f) Because, in the constitution that described to claim 8, is arranged a duct line exhausting cohesion water from a vaporizer of an air conditioner in the lower part of the body, cohesion water does not pollute floors of a compartment.

[BRIEF DESCRIPTION OF DRAWINGS]

[FIG. 1]

It is a schematic vertical cross-sectional view of a device of the present invention installed to a car.

[FIG. 2]

It is a sectional view in II - II Line of FIG. 1.

[DENOTATION OF REFERENCE NUMERALS]

(10) Heating / ventilation / an air conditioner (12) A compartment (14) separation partition (16) An engine compartment (18) blower (20) A floor (22) distributor (23) A case (24) inlet aperture (26) A discharge opening (28) vaporizer (30) A fan unit (32) fresh air ingestion tube (34) A fresh air inhalation bore (36) shelter belt window (38) A hood (40) air intake (42) The fresh air manifold (44) resulting heated air manifold which is turned on (46) A heat exchanger (48) flap valve (50) (54) (58) (60) an air outlet (52) (56) (62) flap valve (64) A housing (66) gauge panel (68) An exhaust pipe (70) aperture (72) The front wall (74) rear wall (76) Sidewalls (78) circulation air inlet aperture (80) A flap valve (82) stopper (84) Fan (86) rotational axis (88) A motor (90) (92) air inlet aperture (F1) fresh air (F2) circulation air

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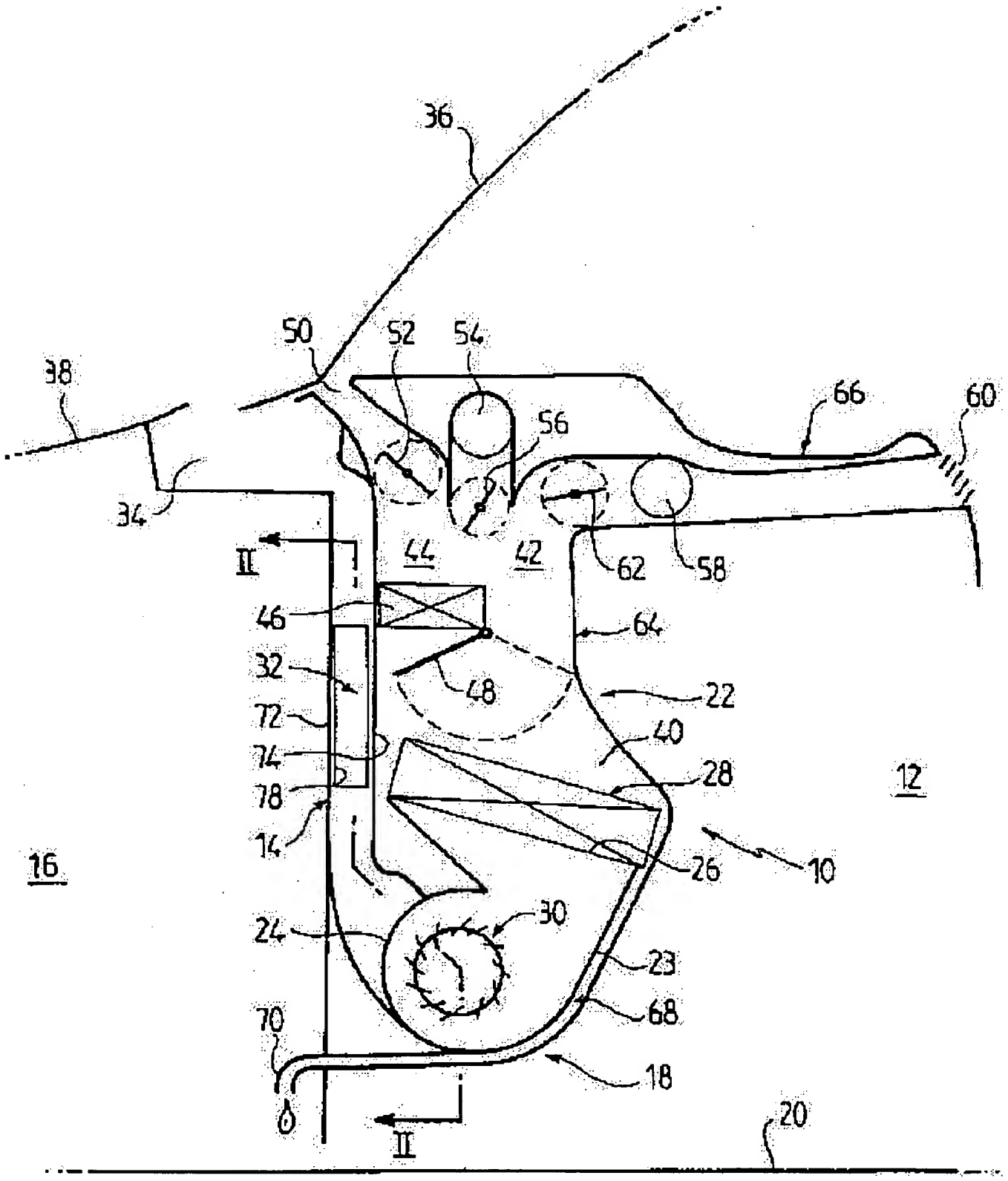
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Application no/date: 1984-160823[1984/10/24]
Date of request for examination: [1985/ 9/21]
Accelerated examination ( )
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Examined publication no/date (old law): 1993- 3365 Translate [1993/ 1/27]
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Applicant: BOSCH AUTOMOTIVE SYSTEMS CORP
Inventor: KANEKO HISAYOSHI
IPC: B60H 1/00 ,102
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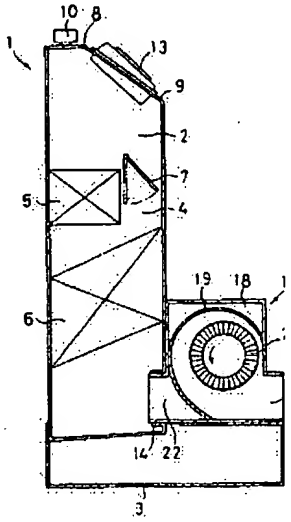
F-Term: 3L011BA00,BL02
Expanded classicication: 262,242
Fixed keyword:
Citation: [19,1988. 7.19,] (, ,)
Title of invention: Air conditioner for vehicle
Abstract: [ABSTRACT]

By what bonding direction to air conditioner body of blower body is cha into, lower part balloon can be got in heating in a top balloon in cool and basic *tokansokunetsu* of air conditioner can be shown, air condition *fuiringu* can be improved.
Additional word:It is had access to construction wheel for two uses, se



Priority country/date/number: ( ) [ ] ( )
Domestic priority: [ ] ( )
Original application number: ( )
Original registration number: ( )
Retroactive date:[ ]
No. of claims (1)
Classification of examiners decision/date: (decision of rejection) [1989/ 5/23]
Final examinational transaction/date: (registration) [1993/11/26]
Examination intermediate record:
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(A523 1988/10/28,WRITTEN AMENDMENT, :)
(A02 1989/ 5/23,DECISION OF REJECTION, :)
(A523 1989/ 6/20,WRITTEN AMENDMENT, :)
(A911 1990/ 1/ 9,TRANSFER TO RECONSIDERATION BY EXAMINER BEFORE APPEAL, :)
(A913 1990/ 1/11,WRITTEN REPORT OF RECONSIDERATION BY EXAMINER BEFORE APPEAL , :)
(A912 1990/ 3/ 1,RELEASE OF RECONSIDERATION BY EXAMINER BEFORE APPEAL, :)(A61 1993/ 9/ 1,PAYMENT OF ANNUAL FEE, :)
*** Trial no/date 1989- 11225[1989/ 6/19] Kind of trial [appeal against decision of rejection] ***
Demandant: 13-ZEXEL:KK
Defendand: -
Opponent: -
Classification of trial decision of opposition/date: ( ) [ ]
Final disposition of trial or appeal/date: (approval of demand (completion of demand)) [1993/ 8/ 9]
Trial and opposition intermediate record:
(T51 1989/ 6/20,AMENDMENT (FORMALITY), : B)
(T60 1989/ 6/20,DEMAND FOR TRIAL (INCLUDING OTHER DEMANDS AND REQUESTS), 4 4000: A)(T20 1989/ 7/14,NOTIFICATION OF TRIAL NUMBER, :)
(T91 1990/ 1/ 9,TRANSFER OF EXAMINATION, :)
(T21 1990/ 1/19,NOTIFICATION OF TRANSFER OF THE EXAMINATION TO THE EXAMINER S, :)
(T92 1990/ 3/ 1,CANCELLATION OF TRANSFER OF EXAMINATION, :)
(T211 1990/ 3/ 9,NOTICE OF CANCELLATION OF THE TRANSFER OF THE EXAMINATION, :)(T72J 1990/ 7/31,NOTICE OF CHANGE OF NAME, : C)
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(T22 1993/ 7/23,NOTICE OF DESIGNATION (CHANGE) OF TRIAL EXAMINERS, :)(T03 1993/ 8/ 6,TRIAL DECISION, : D)
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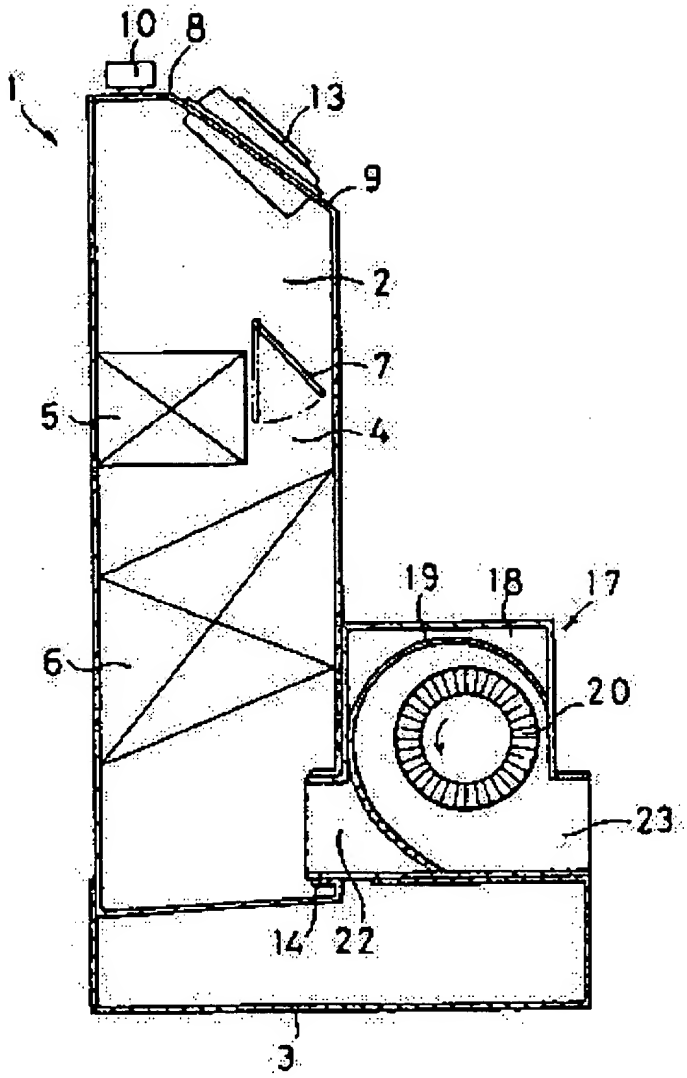
Other Drawing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